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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,812	03/18/2002	Kevin M. Short	11986/59946	4075

26869 7590 09/11/2003

DEVINE, MILLIMET & BRANCH, P.A.
111 AMHERST STREET
BOX 719
MANCHESTER, NH 03105

EXAMINER

JACKSON, JENISE E

ART UNIT	PAPER NUMBER
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2131

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/099,812

Applicant(s)

SHORT, KEVIN M.

Examiner

Jenise E Jackson

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-9, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart(5,592,555) in view of Cuomo et al. (IEEE Transactions on Circuits and System 1993).

3. As per claims 1, 11, Stewart(5, 592, 555) discloses a remote digital key generation, selecting an initialization code (see col. 7, lines 1-21, 62-67, col. 8, lines 1-18), sending the initialization code(see col. 8, lines 35-50, col. 9, lines 45-60). Further, Stewart discloses a communication system, which transmits a data stream between transmitter and receiver sites(abstract). Stewart also discloses that the bitstreams (i.e. keystream) are identical for both transmitter and receiver (see col. 10, lines 11-16). Also, Stewart discloses an encryptor and decryptor(see col. 7, lines 1-45). Stewart is silent on two chaotic systems that are synchronized.

4. Cuomo et al. teaches a method of two identical chaotic systems that may be synchronized using a perturbative drive signal, which may be used to chaotically mask binary stream transmissions(see pg. 626, col. 1), and which can be controlled with a binary stream value of 0 and 1(see col. 1, pg. 630).

5. A person of ordinary skill in the art would have been motivated to combine the teaching of Stewart and Cuomo, in order to take an already flexible communication system with digital control capabilities and a initialization code with bit stream, to encrypt/decrypt a message and

Art Unit: 2131

combine it with a chaotic masking which can be implemented via electronic circuits such as those disclosed by Cuomo, to produce say secure digital telephone network. Thus, the motivation to include the chaotic systems of Cuomo is that chaotic signal masking technique is a useful approach to private communications(see pg. 626).

6. As per claims 2, 7, remote digital key generation, wherein the first chaotic system is defined by a set of differential equations, Cuomo, describes a chaotic system that uses differential equations, of the form equation(1)(see pg. 626).

7. As per claims 3, 8, Cuomo teaches wherein the first the chaotic system is defined by a mapping function, because such a mapping function could be provided by the phase space solution of equation(1).

8. As per claims 4, 9, Cuomo teaches wherein the first chaotic system is defined by an electrical circuit(see fig. 6).

9. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart(5,592,555) and Cuomo et al. (IEEE Transactions on Circuits and System 1993), in view of Lai et al.(SPIE, 1993, pg. 91).

10. As per claims 5 and 10, Applicant recites a digital communication system with the limitations of claim 1, and with the further limitation that the chaotic system must defined by an optical system.

11. Lai, however, discloses a chaotic optical system using synchronization and control. Those skilled in the art, would recognize the equivalence of such systems for defining chaotic behavior and would have investigated each such system as an alternative generator for chaotic behavior.

Art Unit: 2131

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenise E Jackson whose telephone number is (703) 306-0426. The examiner can normally be reached on M-Th (6:00 a.m. - 3:30 p.m.) alternate Friday's.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (703) 305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-0040 for regular communications and (703) 308-6306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



September 5, 2003



AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100